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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,230	12/08/2004	Heiko Sponar	R.301921	2630
2119	7590	12/16/2005	EXAMINER	
RONALD E. GREIGG GREIGG & GREIGG P.L.L.C. 1423 POWHATAN STREET, UNIT ONE ALEXANDRIA, VA 22314			MULLINS, BURTON S	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/517,230

Applicant(s)

SPONAR ET AL.

Examiner

Burton S. Mullins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 11, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in view of Shteynberg et al. (US 6,941,644). The *Jepson* format of the preamble of claim 11 is taken as an implied admission that the subject matter of the preamble is the prior art work of another. *In re Fout*, 675 F.2d 297, 301, 213 USPQ 532, 534 (CCPA 1982) (holding preamble of *Jepson*-type claim to be admitted prior art where applicant's specification credited another as the inventor of the subject matter of the preamble). Hence, the prior art teaches the multi-part stator with fins and grooves for accommodating windings wound around insulator elements, but does not teach the improvement wherein the stator comprises a number of first wound insulator elements that are wound one after another with the same first, uncut winding wire and a number of second insulator elements that are wound one after another with the same second, uncut winding wire.

Shteynberg meanwhile teaches a method of manufacturing an electrical machine comprising multiple segments or bobbins wherein a number of first wound bobbin elements 115 are wound one after another with the same first, uncut winding wire (i.e., a single continuous length of wire; c.7, lines 33-44; Fig.10) using a bobbin winder 130 and a number of second bobbin elements 116 (forming second phase winding) are wound one after another with the same

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second, uncut winding wire (i.e., a single continuous length of wire; c.7, line 66-c.8, line 2; Figs.13-14). Shteynberg's continuous winding method reduces the number of manual interconnections and makes use of existing bobbin winders (c.3, lines 23-43).

It would have been obvious to one of ordinary skill to modify the admitted prior art and provide a continuous winding method using uncut first and second windings for first and second sets of stator elements per Shteynberg since this would have reduced the number of manual interconnections and made use of existing bobbin winders.

Regarding claim 27, the prior art includes brushless asynchronous, synchronous or EC motors (specification paragraph 3).

Regarding claim 29, the leads of the wires in Shteynberg are electrically connected to power supply lines by means "interconnection grids" comprising wye- or delta-configurations (c.3, lines 28-32).

3. Claims 12-14, 20-24 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art and Shteynberg, further in view of Yamada et al. (US 5,986,377). The admitted prior art and Shteynberg do not specifically teach insulator elements that are frame-shaped or ring-shaped coil bodies and that can be slid around or onto stator fins or onto teeth of the stator.

Yamada teaches a stator for a motor wherein frame- or ring-shaped bobbins 17 are slid onto stator teeth 15, which are then bent into position (Fig.1). This method improves torque uniformity and provides a means to secure the coils (c.2, lines 44-53).

It would have been obvious to one having ordinary skill to modify admitted prior art's and Shteynberg's machine and provide frame-shaped or ring-shaped insulator/coil bodies that

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can be slid around or onto stator fins or teeth of the stator per Yamada since this would have improved torque uniformity and provided a means to secure the coils.

Regarding claims 13-14, Yamada's bobbins inherently "form-fit" to the stator poles teeth since they fit around the teeth.

Regarding claims 20-22, Yamada teaches channel-like recesses or concave strand-accommodating portions 115a on the outer edges of the bobbins (Figs.89-90&95).

Regarding claims 23-24, Yamada teaches fall-off preventing projections 115h which fasten the bobbins to the stator teeth (Figs.95-96).

Regarding claim 30, the leads of the coils in Shteynberg are electrically connected to power supply lines by means "interconnection grids" comprising wye- or delta-configurations (c.3, lines 28-32).

4. Claims 15, 17, 19 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art and Shteynberg, further in view of Stokes (US 5,570,503). The multi-part stator in the prior art and Shteynberg does not comprise a hollow, cylindrical yoke ring and a toothed ring concentric to it whose teeth constitute stator fins to which insulator elements can be fastened (claim 15). Further, regarding claims 17 and 19, while the admitted prior art and Shteynberg teach insulator elements provided with winding wires fastened to the stator parts, the combination does not teach a yoke ring.

Stokes teaches a method for making a motor stator including a hollow, cylindrical yoke ring 50 (Fig.4) and a toothed ring 58 concentric to it whose teeth 60 constitute stator fins to which insulator elements 48 can be fastened. This method allows for efficient packing of the coil windings (c.2, lines 8-15).

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It would have been obvious to one having ordinary skill to modify the stator of the admitted prior art and Shteynberg and provide a hollow, cylindrical yoke ring and a toothed ring concentric to it whose teeth constitute stator fins or a yoke ring per Stokes since this would have allowed for efficient packing of the coil windings.

Regarding claim 28, the prior art includes brushless asynchronous, synchronous or EC motors (specification paragraph 3).

5. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, Shteynberg and Yamada as applied to respective claims 12 and 13 above, further in view of Stokes (US 5,570,503). The multi-part stator of the prior art, Shteynberg and Yamada does not comprises a hollow, cylindrical yoke ring and a toothed ring concentric to it whose teeth constitute stator fins to which insulator elements can be fastened. Further, regarding claim 18, while admitted prior art, Shteynberg and Yamada teach insulator elements provided with winding wires fastened to the stator parts, the combination does not teach a yoke ring.

Stokes teaches a method for making a motor stator including a hollow, cylindrical yoke ring 50 (Fig.4) and a toothed ring 58 concentric to it whose teeth 60 constitute stator fins to which insulator elements 48 can be fastened. This method allows for efficient packing of the coil windings (c.2, lines 8-15).

It would have been obvious to one having ordinary skill to modify the stator of the admitted prior art, Shteynberg and Yamada and provide a hollow, cylindrical yoke ring and a toothed ring concentric to it whose teeth constitute stator fins or a yoke ring per Stokes since this would have allowed for efficient packing of the coil windings.

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6. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art and Shteynberg, further in view of Hertrich (US 4,874,975). The admitted prior art and Shteynberg do not specifically teach applicant's uniform winding direction.

Hertrich, meanwhile, teaches a brushless dc motor wherein all the field pole windings in each phase are wound in the same direction, so that they have the same magnetic polarity when the coils are excited (c.2, lines 10-17). This reduces the number of switches and the voltage drop associated therewith, thereby maximizing efficiency.

It would have been obvious to one having ordinary skill to modify the admitted prior art's and Shteynberg's winding arrangement and provide field poles windings wound in the same direction per Hertrich to improve machine efficiency.

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art, Shteynberg and Yamada as applied to claim 12 above, further in view of Hertrich (US 4,874,975). The admitted prior art, Shteynberg and Yamada do not specifically teach applicant's uniform winding direction.

Hertrich, meanwhile, teaches a brushless dc motor wherein all the field pole windings in each phase are wound in the same direction, so that they have the same magnetic polarity when the coils are excited (c.2, lines 10-17). This reduces the number of switches and the voltage drop associated therewith, thereby maximizing efficiency.

It would have been obvious to one having ordinary skill to modify the winding arrangement of the admitted prior art, Shteynberg and Yamada and provide field poles windings wound in the same direction per Hertrich to improve machine efficiency.

***Response to Arguments***

8. Applicant's arguments with respect to claims 11-30 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be



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reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins  
Primary Examiner  
Art Unit 2834

bsm

12 December 2005